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ABSTRACT

This unit was designed for use by secondary school students in social studies classes. Materials are provided for four class periods. Emphasized is exploitation of mineral, food, and animal resources found in the sea. Included are suggestions to the teacher, student activities, assessment materials, and a selective bibliography. (RH)

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ECONOMIC AND POLITICAL EXPLOITATION OF MARINE RESOURCES

A Learning Experience for
Coastal and Oceanic
Awareness Studies

Produced by

MARINE ENVIRONMENT CURRICULUM STUDY
MARINE ADVISORY SERVICE
UNIVERSITY OF DELAWARE

and

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Please send evaluations

of learning experiences

to

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TITLE: ECONOMIC AND POLITICAL EXPLOITATION OF MARINE RESOURCES

* CONCEPT: V.A.2.j.

V. The activities of human populations may lead to conditions restricting the quality of life.

A. Human populations may lead to poverty and hunger and restrict human fulfillment.

2. Resource management may contribute to poverty and hunger.

j. ECONOMIC GAIN DETERMINES RESOURCE USE.

** MARINE CONCEPT: 4.21

4. Man is part of the marine ecosystem.

4.2 Man's activities may deplete and degrade marine ecosystems.

4.21 EXPLOITATION OF MARINE AND COASTAL ENVIRONMENTS CAN CAUSE DEPLETION OF MANY MARINE SPECIES AND DEGRADATION OF HABITATS.

GRADE LEVEL: 7-12

SUBJECT: Social Studies

CLASS PERIODS: 4

AUTHOR: Conley

TEACHER SECTION

Introduction

This learning activity was designed to give the student the opportunity to form his opinions on the topics both by independent study and by group inquiry.

Lesson #1: Marine Resources (See Student Section pp. 17-20)

To introduce the concept to the class it may be beneficial for the teacher to read the first paragraph of the introduction to Lesson 1 to the class.

Parts 1, 2, and 3 are for independent study. The time allotment will vary with the ability of the class. Also some students will be required to reread the assigned reading material after taking the self-graded quiz. (Estimated time is 15 to 20 min.)

Part 4 is a class inquiry. It is hoped that the facts and ideas contained in Parts 1 to 3 will provoke some open-end discussions of marine resources.

* From A Conceptual Scheme for Population-Environment Studies, 1973. Cost $2.50.

** From Marine Environment Proposed Conceptual Scheme, 1973. No charge.

Both conceptual schemes are available from Robert W. Stegner, Population-Environment Curriculum Study, 310 Willard Hall, University of Delaware, Newark, DE 19711.

R876

The following series of inquiry oriented questions might be used to arouse student interest in this unit.

1. If a large deposit of valuable minerals were discovered within mining depth in international waters off the coast of Delaware, should any nation, including our enemies, be permitted to mine it?

2. If this happened, what legal recourse would the United States have?

3. How would international law regulate such a situation?

4. Should the United States then attempt to alter established international law?

5. Would the United States want to change the law anyway? Won't present law permit the United States, one of the most technologically advanced nations, to be one of the first to extract the deep-sea minerals as soon as it becomes technologically feasible?

6. Should the laws remain constant or should they change with each generation?

7. To whom do the resources of the ocean belong? Do people who live in countries with no access to the sea have any right to the wealth of the sea?

Lesson #2: Marine Food Resources (see pp. 21-23)

Lesson #2 is divided into 4 parts. Parts 1, 2, and 3 are designed for independent study. The estimated time for these parts is 15 to 20 minutes.

Part 4 is devoted to a group inquiry. The teacher should be able to draw upon the ideas that have been developed during the past two classes. (20 to 30 min.)

The following are suggested inquiry questions that should help get the discussion started and are vital in preparing the class for Lesson #3.

1. Should modern man with all the problems of a war, pollution, and race hatred be concerned when a species of marine life faces extinction?

2. What methods could possibly be implemented to protect an endangered species?

3. Do all these methods imply some kind of international regulations?

4. How can you have "freedom of the seas" on the one hand and international regulations on the other?

5. What type of international organization would you set up to protect the species? Who would be members? Would you work with the framework of an existing international organization? i.e., The United Nations.

6. What kind of powers over the member nations would the organization have?

7. What good would the organization be if only some of the involved nations joined and others refused to join?

8. What is the key ingredient needed to make an international agreement work?

Lesson #3: Whaling: A Case Study (pp. 24-27)

Lesson #3 is a five-part exercise. Parts 1, 2, and 3 are geared for independent study. (15 to 20 min.)

Part 4 is a slide presentation showing the various stages that the whaling industry has gone through in the last 150 years. (10 min.)

The following commentary can be read by the teacher or a student as the slides are being shown. The slides should be used to bring out points mentioned in the individual study reading assignment.

Slide 125 - A dead sperm whale being slaughtered off the Azores. The legendary Moby Dick belonged to this species.

Slide 126 - This slide shows the modern variation of the steam powered harpoon gun invented by Captain Foyn in 1862.

Slide 127 - A harpooned whale in flight.

Slide 128 - A harpooned whale is being pumped full of compressed air to keep it afloat until it can be pulled aboard the factory ship.

Part 5 is a group inquiry discussion. The following questions might be used. (20 minutes)

1. What do you feel is the future of the remaining whales?

2. What might have happened if the whaling nations had cooperated with one another and established realistic quotas and regulations?

3. Do you think that fixed proportions of whales could have been harvested each year? What benefits would have been guaranteed to the people of the world by doing that?

4. Based on our discussion at the end of the last class, what powers could have been given to the whaling commission to enforce its regulations?

Lesson #4: The Fur Seal: A Case Study (See pp 28-30.)

Parts 1, 2, and 3 are designed for independent study. (15 min.) Part 4 is a slide presentation. These slides should be shown with no narration. Following the slides the student will be asked to write his impressions of the seal kill. More explicitly the student will be asked to tell if he feels this is inhumane treatment of helpless animals or simply the harvesting of a valuable crop.

For the teachers background a description of the slides is included here.

Slide 129- A group of fur seals on Pribilof Island.

Slide 130- This is a young Canadian harp seal. The Canadian government permits pups to be harvested by hunters.

Slide 131- A fur seal cow in the act of protecting her pup.

Slide 132 and 133 - Two harp seal mothers standing beside their dead pups.

Slide 134- This slide shows the primitive method used by the natives to kill the fur seals.

Slide 135- In the background can be seen a group of fur seals recently harvested laid out in a line to be processed.

Slide 136- A Canadian harp seal hunter standing next to his catch.

Part 5 is a group inquiry session. (15 to 20 min.)

1. How does the treatment of the seal differ from that of the whale?
2. Why can nations agree to protect one but not the other?
3. What had to take place before the nations would act to protect the seal?
4. Could the revenue sharing concept be adopted by the whalers?

Audio Visual Aids Needed

35 mm. slide projector

PRE-TEST KEY (Pre-test, pp. 15-16)

* This symbol indicates correct answer.

1. In 1931 an international agreement was signed which attempted to control the killing of certain species of whale. This agreement which ended in failure was called the:

   a. International Whaling Commission

   b. World Whaling Convention

   *c. Convention for the Regulation of Whaling

2. Which of the following was the last marine resource to be exploited by man?

   a. The ocean food resources

   *b. The ocean mineral resources

   c. The ocean transportation resources

3. The North Pacific Sealing Convention protected which of the following species of seal?

   a. elephant seal

   b. harp seal

   *c. fur seal

4. Which of the following minerals is not currently being extracted from the continental shelf region?

   a. oil

   *b. manganese

   c. natural gas

5. Which of the following nations was the first to make the Mediterranean Sea a vehicle for transportation?

   a. Egyptians

   *b. Phoenicians

   c. Romans

6. The process of extermination of a species is technically called:

   a. annihilation

   *b. overexploitation

   c. super fishing

7. Which of the following marine species is not presently in danger of extermination?

   a. Arctic Penguin

   b. White Albatross

   *c. Peruvian Tuna

8. In 1862 and 1925 the whaling industry was saved from possible financial doom because of:

   a. International regulations of whaling

   b. Two world wars which produced a large demand for oil

   *c. Technological innovations in whaling techniques.

9. Man's attitude through history towards the usage of marine food resources can best be described as one of international

   a. good will

   b. cooperation

   *c. competition

POST TEST KEY (post-test, p. 34.)

*This symbol indicated correct answer.

1. What are the three broad categories of marine resources?

   a. The ocean is a source of food.

   b. The ocean is a source of minerals.

   c. The ocean is a medium for transportation.

2. What two minerals are currently being extracted from the continental shelf?

   a. oil

   b. natural gas

3. What are the three types of marine food resources?

   a. finfish
   b. shellfish
   c. marine mammals
   d. seaweed

4. Name any four of the six endangered species of marine life mentioned in the Lesson.

   a. Arctic penguin
   b. elephant seal
   c. sea otter
   d. white albatross
   e. blue whale
   f. sperm whale

5. Name any three of the four species of whale that were exterminated from the North Atlantic.

   a. Biscayan Right Whale
   b. Atlantic Right Whale
   c. Greenland Right Whale
   d. Blue Whale

6. Which of the following did not sign the North Pacific Sealing Convention?

   a. United States

   *b. Canada

   c. Japan

   d. Russia

7. Which of the following minerals is not mentioned in your text as being present on the ocean bed floor?

   a. manganese

   *b. tungsten

   c. nickel

   d. sulphur

8. The process of extermination of a species is technically called overexploitation.

9. What were the two attempts in the 20th century to create international regulations for the whaling industry?

   a. convention for the regulation of whaling

   b. International Whaling Commission

SOURCES OF AUDIO-VISUAL AID MATERIAL

Lesson 3: Whaling: A Case Study

The slide presentation prepared for Part 4 of Lesson 3 was compiled from photographs in various texts on the subject.

Slide 125 from Tryckare, p. 157.

Slide 126 from Tryckare, p. 217.

Slide 127 from Tryckare, p. 192.

Slide 128 from Tryckare, p. 196.

Lesson 4: The Fur Seal: A Case Study

The slide presentation prepared for Lesson 4 Part 4 was compiled from photographs in various texts on the subject. Recognition by slide is as follows:

Slide 129 from Gavin Maxwell, The Seals of the World, opposite title page.

Slide 130 from Brian Davies, Savage Luxury, p. 48.

Slide 131 from Davies, p. 48.

Slide 132 from Davies, p. 111.

Slide 133 from Davies, p. 111.

Slide 134 from Davies, p. 176.

Slide 135 from Davies, p. 176.

Slide 136 from Davies, p. 110.

Slide 129 was taken from The Seals of the World by Gavin Maxwell, illustrated by Sven Gillsater, published in 1967 by Houghton Mifflin Company, Boston, and is used with the permission of the publisher.

Slides 130, 131, 132, 133, 134, 135, and 136 were taken from Savage Luxury: The Slaughter of Baby Seals, by Brain Davies, copyright © 1970 by Brian Davies, published by Taplinger Publishing Co., Inc., New York, 1971, and are used with permission of the publisher.

Slides 125, 126, 127, and 128 were taken from The Whale, by Tre Tryckare, published in 1968 by Simon and Schuster, Inc., New York, and are used with permission of the publisher.

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Student Section

Objectives

1. The student will be able to name the three broad categories of marine resources as stated in Lesson 1.

2. The student will be able to name the two geographical ocean regions where marine mineral resources are found, as stated in Lesson 1.

3. The student will be able to name the two minerals currently being extracted from the continental shelf region, as stated in Lesson 1.

4. The student will be able to list three of five minerals known to exist on the ocean bed floor, as stated in Lesson 1.

5. The student will be able to write a brief well-organized essay tracing the ocean as a medium for transportation from the time of the Phoenicians to the 20th century, as stated in Lesson 1.

6. The student will be able to name the three types of marine food resources as stated in Lesson 2.

7. The student will be able to list 4 of the 6 endangered species of marine life stated in Lesson 2.

8. The student will be able to define the term "overexpliotation" as used in Lesson 2.

9. The student will be able to list three of the four species of whale that were exterminated from the North Atlantic Ocean as stated in Lesson 3.

10. The student will be able to write a well-organized essay explaining in detail the innovations that were introduced into the whaling industry in 1862 and 1925 as stated in Lesson 3.

11. The student will be able to correctly identify five of seven slides concerning the processing of the whale carcass as described in class.

12. The student will be able to write a brief,well-organized essay explaining the goals and fate of the Convention For the Regulation of Whaling as stated in Lesson 3.

13. The student will be able to write a brief,well-organized essay comparing the powers and weaknesses of the International Whaling Commission, as stated in Lesson 3.

14. The student will be able to list in chronological order the chain of events that occur in the life of the fur seal herds while on the Pribilof Islands as stated in Lesson 4.

15. The student will be able to name two of the provisions of the North Pacific Sealing Convention, as described in Lesson 4.

16. The student will be able to name three of the four nations that signed the North Pacific Sealing Convention as stated in Lesson 4.

17. The student will be able to name two reasons why the history of man's exploitation of the oceans' food resources has been marked by conflict and competition rather than cooperation, as stated in the conclusion to the learning activity.

PRE-TEST

1. In 1931 an international agreement was signed which attempted to control the killing of certain species of whale. This agreement, which ended in failure, was called the:

   a. International Whaling Commission

   b. World Whaling Convention

   c. Convention for the Regulation of Whaling

2. Which of the following was the last marine resource to be exploited by man:

   a. the ocean food resources

   b. the ocean mineral resources

   c. the ocean transportation resources

3. The North Pacific Sealing Convention protected which of the following species of seal:

   a. elephant seal

   b. harp seal

   c. fur seal

4. Which of the following minerals is not currently being extracted from the continental slope region?

   a. oil

   b. manganese

   c. natural gas

5. Which of the following nations was the first to make the Mediterranean Sea a vehicle for transportation?

   a. Egyptians

   b. Phoenicians

   c. Romans

6. The process of extermination of a species is technically called:

   a. annihilation

   b. overexploitation

   c. super-fishing

7. Which of the following marine species is not presently in danger of extermination?

   a. Arctic Penguin

   b. White Albatross

   c. Peruvian Tuna

8. In 1862 and 1925 the whaling industry was saved from possible financial doom because of:

   a. International Regulations of Whaling

   b. Two world wars which produced a large demand for oil

   c. Technological innovations in whaling techniques

9. Man's attitude through history towards the usage of marine food resources can best be described as one of international:

   a. good will

   b. cooperation

   c. competition

Lesson 1, Part 1

Introduction

Throughout the recorded history of civilization, the oceans and its resources have played a vital role in the interactions between nations. Unfortunately more often than not this relationship has been one of conflict and competition,not cooperation. The principle reason for this interaction has been the desire of the nation or nations to exploit or use for its own profit either economically or politically one of the marine resources.

Marine Resources

Your dictionary will probably define a resource as "something that lies ready for use or can be drawn upon in an emergency." The resources of the ocean, commonly called marine resources, can be divided into three broad categories: (1) the ocean is a source of food, (2) the ocean is a source of minerals, (3) the ocean is a medium for transportation of men and goods.

Often a problem or dispute involving one of the marine resources tends to include the other two. For example, an offshore oil drilling rig may disrupt both shipping lanes and fishing areas. For this reason it will be beneficial to have at least a brief understanding of what is included under the other two marine resource categories.

The Ocean is a Source of Minerals

Ocean mineral deposits are the most recent of the three categories to be exploited by man. Not until the 20th century did man gain the technology to extract these minerals from the shallow sections of the ocean floor.

The mineral deposits of the ocean can be found in basically two geographical areas: 1) the continental shelf and slope region, and 2) the ocean bed region.

In the continental shelf and slope region the two most valuable minerals extracted so far have been oil and gas. Approximately 20% of the world's supply of natural gas and oil come from this region. Even with the technological advances of the 1960's man can still only drill in water up to 103 meters deep.

In the deep water ocean bed region lie many valuable minerals. However, present day technology does not make it economically feasible to extract them. Some of the minerals found in the ocean bed are aluminum, sulfur, copper, nickel and cobalt. With the world's above water supply of many of

these minerals expected to last only about another 100 years, it becomes increasingly important to discover some way of mining the ocean floor.

The Ocean as a Medium of Transportation

No one can say with certainty at what point in ancient time man first used the oceans as a vehicle to get from one place to another. The first evidence of western man venturing out into the oceans comes with the Phoenicians. Approximately 500 years before the birth of Christ, the Phoenicians in boats rigged with sails were traveling from the eastern end of the Mediterranean to England and the north coast of Africa. Around the year 1000 A.D. Lief Erickson traveled from Norway to the eastern coast of America. By the 15th century, Spanish, Portuguese, and Dutch ships were exploring the Atlantic.

The 17th to the 19th centuries saw the oceans of the world serving as a vehicle on which the mother countries of western Europe were sending soldiers and supplies to the colonies and bringing back precious raw materials.

Twentieth century man has used the oceans to fight two major world wars and to transport raw materials and finished products from one continent to another. In the 1970's the commercial role of the oceans has changed so that it is used mainly for the transport of goods due to the wide use of commercial aircraft for passenger travel. The military role of the ocean, especially as a hiding place for Polaris-type submarines is still important.

The oceans of the world have been so important to man that he has seen fit to develop over the past 500 years a series of laws to govern its use--the international law of the high seas. These laws have often been abused in times of crisis by the major powers but the very fact they exist serves to reinforce the important role the sea has played in the history of man.

Lesson 1, Part 2

Self-check Quiz:

Answers must be based on information found in the previous reading assignment only.

1. Define a resource.

2. What are the names of the three broad categories of marine resources?

3. What is the most recent category of marine resources to be exploited?

4. What are the two most valuable minerals so far extracted from the continental shelf and slope region?

5. Name any three minerals now found in the ocean bed.

6. What people around the year 500 B.C. began traveling throughout the Mediterranean?

7. In the 1970's will the ocean most likely be used for the transportation of people or the transportation of goods?

Lesson 1, Part 3

Answers to Self-check Quiz #1:

1. A resource is something that lies ready for use or can be drawn upon in an emergency.

2. a. the ocean is a source of food.
   b. the ocean is a source of minerals.
   c. the ocean is a medium for transportation of men and goods.

3. The ocean as a source of minerals.

4. Oil and natural gas.

5. Aluminum, sulfur, copper, nickel, and cobalt.

6. Phoenicians.

7. Goods.

If you have answered any of the above questions incorrectly, return to Lesson 1, Part 1 and reread.

Lesson 2, Part 1

The Ocean as a Source of Food

Any discussion concerning the exploitation of the marine food resources must first be preceded by an explanation of just what these food resources are. Marine food resources includes basically all finfish, shellfish, seaweed and marine living mammals. Marine mammals that serve as a source of clothing for man are also included in this group. To further break down these four categories of marine food resources would involve a lesson in itself.

The ocean has been a source of food for man since the time of the caveman and the lake dweller. With each succeeding improvement in boats and equipment larger and larger quantities of marine food resources were consumed by man.

The ocean harvest for 1970 was 55 million metric tons. For these 55 million metric tons the people of the world paid $8 billion. Ninety-eight percent of this catch consisted of finfish , the rest being whales, crustaceans, mollusks, etc. Fourteen nations of the world competed for and cornered all but 1/4 of the $8 billion market.

The rate of increase in the ocean harvest is very significant. In the century from 1850 to 1950 the world catch increased tenfold, at an average rate of about 25% per decade.

Exploitation vs. Overexploitation

The nations of the world have for centuries refused to accept any restrictions or limitations on the quantity of fish that any one nation could catch. The international law of the seas provides for "complete freedom of the seas" outside accepted territorial waters (varies from 3 to 12 miles in most of the world, South America excluded). For most of the previous history this lack of catch restrictions is understandable. Both the size of the ships and the method used to catch the fish ensured the continuation of practically all the species of marine life. A ship would put to sea, catch as many as it could hold, and return to port to process and sell its catch. However, modern technology has provided a fishing fleet complete with an accompanying processing ship. The smaller ship catches its limit, transfers it to the processing ship, and returns to chase the same school of fish if possible.

In many cases the species reproduces itself so quickly that it is doubtful that man will ever be able to completely exterminate it. Some species, however, have not been so lucky when forced to compete with man's desire for money and his refusal to accept any limitations on his freedom of the seas.

Looking back on recent history many examples of the "unlucky" species can be observed. The Stellar Sea Cow was completely wiped out 27 years

after it was discovered. The Arctic Penguin, elephant seal, sea otter, white albatross, sperm whale, and the blue whale are on the verge of extinction. Several species of seal have been wiped out over the greater part of their former ranges.

This process of extermination of a species is technically called "overexploitation". Its results vary from a slow decline in the abundance and availability of a species to its abrupt and permanent elimination.

In fishing the usual signs of overexploitation are a decline in the average size of the fish of a given species that are taken and an increased intensity of the effort necessary to make the same amount of catch as in previous years.

The normal response to a declining marine species has been for the fleet to increase its amount of time and energy, while making improvements in gear and fishing methods.

In most cases an attempt to revive the species by halting or limiting the size of the catch is never initiated.

Lesson 2, Part 2

Self-check Quiz #2:

All answers must be based on information found in the previous reading assignment only.

1. Marine food resources can be divided into what four groups?
2. The bulk of the marine food catch consists of which one of the four in answer #1.
3. What provides for the "complete freedom of the seas"?
4. Name three marine species now on the verge of extinction.
5. What is the process of extermination of a species technically called?

Lesson 2, Part 3

Answers to self-check quiz #2:

1. a. finfish
   b. shellfish
   c. marine living mammals
   d. seaweed
2. finfish

3. International Law of the Seas

4. Arctic penguin, elephant seal, sea otter, white albatross, sperm whale, and the blue whale.

5. Overexploitation

If you have answered any of the above questions incorrectly, return to lesson 2, part 1 and reread.

Lesson 3, Part 1

Whaling: A Case Study

Introduction:

A study of the whaling industry provides the opportunity to observe man's irrational overexploitation of a valuable marine resource. The study also provides the opportunity to see how international cooperation could have helped and yet failed.

Whaling:

Whaling began in the 12th century in the Bay of Biscay off northern Spain. Here a group of Spaniards called the Basques hunted the small, slow Biscayan Right Whale. It was named the "right" whale because it was small enough to float after it had been killed. The larger species of whale would sink and were therefore called the "wrong" whales. By the 13th century the Basques had established a precedent that would be continued for the next seven centuries - the Biscayan Right Whale had been hunted into extinction.

By the 16th century the whalers of Europe had extended the hunt into the Atlantic off the coast of Great Britain and France. They pursued the species known as the Atlantic Right Whale. It was black in color, very abundant, and rich in oil. By the 17th century the Atlantic Right Whale was extinct.

The whaling fleets now moved further north into the waters around Iceland and Greenland. Here lived a species that was rich in the valuable whale products of baleen, oil, and meat. It was named the Greenland Right Whale and it too soon became extinct.

By the beginning of the 19th century the whalers of the North Atlantic were in serious trouble. The majority of small whales were now extinct; only the large, fast-swimming whales remained. Then in 1862 a Norwegian whaler named Svend Foyn developed a new method for hunting the big whales. He adapted the steam engine to his whaling ship and invented a cannon-fired harpoon with an explosive head. With this device he could now catch the faster whales. The problem of keeping these large whales afloat still remained. To solve this problem Foyn pumped compressed air into the carcass.

Armed with Foyn's new technique the North Atlantic whalers now attacked the large blue whale. The technique was so effective that by 1903 the blue whale was no longer found in the Northern Hemisphere.

Having destroyed their livelihood in the Northern Hemisphere, the whalers now turned to the great Antarctic summer feeding grounds. The first Norwegian fleets to sail in the Antarctic returned home with reports of whale herds of tremendous size.

The estimates of the first Norwegian fleet was accurate. The herds were so bountiful, it is estimated that 25% of the whales killed floated away before they could be skinned. The whalers refused to learn any lessons from their experiences in the North Atlantic. They picked the slowest species in the Antarctic region, the humpback whale, and hunted it mercilessly. In 1911, 8,500 humpback whales were killed; by 1925, only 9 humpback whales could be found to kill.

As the whalers killed off the whales that bred near the Antarctic islands where their fleets anchored, they forced themselves to go out to sea to find whales. This would have been a very costly operation since it involved hauling the dead whales back to one of the islands to be processed. However, in 1925 a Norwegian captain constructed a large "factory" ship that could accompany the fleet out into the Antarctic Ocean. The ship had a slipway by which the whale was hauled onto the deck to be processed. The factory ships were so successful that by 1930 thirty-eight of them were in operation. These ships permitted the whaling nations to increase their catch from 10,500 in 1925 to 40,200 in 1931.

In 1931, the first attempt to create international regulations for the whaling industry was initiated. This attempt was the Convention for the Regulation of Whaling. This agreement tried to protect the remaining "right" whales, immature whales, and females accompanied by a calf. Its effects were immediately doomed because two of the leading whaling nations, Germany and Japan, refused to sign it.

Following World War II a second attempt was made to establish controls due to predictions of many marine scientists that the whale would be annihilated if the pre-war slaughter continued. In 1946 in Washington, D.C. the International Whaling Commission was created. Most of the world's whaling nations joined the Commission. The Commission had the duty to set minimum-length requirements, set the opening and closing dates for the whaling season, and set an annual Antarctic quota.

Despite its impressive responsibilities the Commission was also doomed to the role of a powerless administrator. Any member nation, if it gave 90 days notice, would refuse to obey any Commission decision. Also the Commission was powerless to limit the number of factory ships or to allocate a quota to any of them. This would have violated the principle of the freedom of the high seas which grants to every nation the right to use the resources of the oceans as it decides. The result was an increasing number of whaling fleets hunting fewer and fewer whales!

In the years since the creation of the International Whaling Commission, the estimated quantity of whales has continued to decrease. The necessity to make decisions based on the opinions of the member nations has resulted in protection for the various species of whales coming too little and too late. While scientists and annual catch statistics continually predicted that the blue whale was being hunted into extinction, the Japanese, Russian, and Dutch members refused to agree to any regulation to protect it. In 1964 the number of blue whales killed dropped to 20 for the entire whaling industry. This is compared with 29,400 killed in 1931.

Following the 1964 season the member nations agreed to place the blue whale on the protected species list. In effect the whaling industry had waited until the blue whale could no longer be hunted profitably before they would protect it!

In 1946 the Commission set a quota of 16,000 whales that could be killed. Scientists predicted then that the figure was too high and the whale population would not be able to recover. By 1963 the Committee of Three, a team of three scientists hired by the Commission to advise on the proper quota limit, suggested a limit of 4,000 whales. The Japanese refused to accept a quota of less than 10,000 whales. Since the Japanese could have refused to accept the Commission's quota, the rest of the nations on the Commission agreed to the Japanese figure.

Lesson 3, Part 2

Self-check Quiz #3

All answers must be based on information found in the previous reading assignment only!

1. Define what is meant by a "right" whale.

2. What did Norwegian Captain Svend Foyn invent?

3. What was the last species of whale exterminated in the North Atlantic?

4. What two nations refused to sign the 1931 Convention for the Regulation of Whaling?

5. What was the whale kill quota set in 1963?

Lesson 3, Part 3

Answers to self-check quiz #3:

1. A "right" whale is one that floated when killed.

2. Harpoons fired from cannons and tipped with explosives.

3. Blue Whale

4. Germany and Japan

5. 10,000

If you have answered any of the above questions incorrectly, return to Lesson 3, Part 1 and reread.

Lesson 4, Part 1

The Fur Seals: A Case Study

Introduction

History offers few examples of international cooperation in the use of marine life. However, one of these rare examples stands out to show what can be done when nations agree to work together to protect a vulnerable resource.

The Fur Seals:

Off the coast of Alaska lies a chain of islands on which every year a mysterious chapter of nature repeats itself. Here the Northern Pacific fur seal herds arrive each summer to await the birth of the new members of their species.

The fur seal is a mammal which spends most of his life swimming in the ocean in search of food. The bull fur seals arrive on the island in May and prepare a stretch of beach for themselves and their 50-60 wives. The wives arrive in June. Soon after they arrive the pups are born. By August the pups are old enough to hunt and swim. In September the herd returns to the ocean and starts south to repeat a cycle which will end on the same island nine months later.

The islands are named the Pribilofs after the Russian navigator who discovered and claimed them in 1783. Pribilof was searching for the breeding grounds of the fur seals.

Pribilof wanted to find the seals because of the value of their skins, which were later made into expensive coats. The seals however, had been of value to the Eskimos for centuries because they were a source of food, fuel, and clothing.

While under the control of Russia, the seals were killed by the millions. In 1867 the islands were bought along with Alaska by the United States. The slaughter of the seal did not stop however. The United States granted a 20-year contract to a private company in 1870, which permitted the slaughter to continue. In 1890 the contract was granted again to another company.

It was during this period that the American government became concerned with the impending annihilation of the fur seal. It attempted to control the destruction on the Pribilofs.

However the destruction continued offshore where American, Russian, Canadian, and Japanese fishing boats would spear the seals as they approached the islands.

In 1892 the United States asked Great Britain and Japan for help in protecting the seals. They would agree only to suppress hunting within a 60-mile radius of the Pribilof Islands.

By 1911 a herd that once numbered in the millions had been reduced to 3,191 seals. The nations of the world at this point stepped in to protect what was left of the herd. On July 7, 1911, the North Pacific Sealing Convention was signed by the United States, Japan, Russia and Great Britain. Under the agreement all open sea seal hunting was forbidden north of 30 degrees North latitude. Each nation which owned islands in the area was permitted to regulate hunting on it. The United States and Russia, who owned the islands concerned, agreed to share the revenue gained from the hiles and to give Canada and Japan 15% of the total amount.

Under international protection the herd increased from 3,000 to 4,000,000 in half a century. From this amount an annual harvest of 60,000 to 70,000 three-year-old males is taken.

The killing of the seals is done by the natives of the islands under the supervision of the United States government. The salaries paid by the government to the natives makes up their total income for the year. It should be noted that the methods used by the natives to kill the seals are primitive and considered by some to be inhumane.

Lesson 4, Part 2

Self-check Quiz #4

All answers must be based on information found in the previous reading assignment only!

1. The fur seal was protected by what agreement?

2. What country first claimed the Pribilof Islands?

3. To what countries do the United States and Russia pay 15% of the revenue from the furs?

4. Who kills the fur seal on the Pribilof Islands?

5. Who harvested the fur seals from 1870 to 1890?

Lesson 4, Part 3

Answers to self-check quiz #4:

1. The North Pacific Seal Convention
2. Russia
3. Japan and Canada
4. The natives
5. A private company with a government contract.

If you have answered any of the above questions incorrectly, return to Lesson 4, Part 1 and reread.

CONCLUSION

Cooperation, Competition, or Conflict:

This learning activity has attempted to do a number of things. Lesson 1 showed you the various types of marine resources. Lesson 2 converged on the scope and problems of exploiting marine food resources. Lesson 3 provided a case study on whaling which sadly typifies the international atmosphere regarding fishing. Lesson 4 provided a case study on seals which shows what can be done when nations cooperate.

The reasons that nations have habitually tended toward competition and away from cooperation are basically two: (1) The "freedom of the seas" doctrine provides the international right to fish as one likes, where one likes. (2) The financial gains available from attempting to corner the fish market offer too big a temptation.

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POST TEST

1. What are the four broad categories of marine resources?

2. What two minerals are currently being extracted from the continental shelf?

3. What are the three types of marine food resources?

4. Name any four of the six endangered species of marine life mentioned in this Lesson.

5. Name any three of the four species of whale that were exterminated from the North Atlantic.

6. Which of the following did not sign the North Pacific Sealing Convention?

   a. United States
   b. Canada
   c. Japan
   d. Russia

7. Which of the following minerals is not mentioned in your text as being present on the ocean bed floor?

   a. manganese
   b. tungsten
   c. nickel
   d. sulfur

8. The process of extermination of a species is technically called _____.

9. What were the two attempts in the 20th century to create international regulations for the whaling industry?